

**Recovery of precious metal, notably gold, from a variety of waste s
involves electrolytic dissolution of gold and electrolytic deposition of
gold from solution on an electrode**

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Inventor(s): BEDJAI CLAUDE ANDRE
Applicant(s): BEDJAI CLAUDE ANDRE (FR)
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Abstract

Recovery of precious metals, notably gold, from various waste products and articles is achieved by using a new system of reverse electrolysis comprising two electrolysis chambers and two rinsing chambers. The first electrolysis chamber is a gold dissolution chamber containing alkali cyanide electrolyte and equipped with an immersion heater with probe protection. The second electrolysis chamber is used for the recovery of gold from the alkali bath, and is equipped with 3 cathodes and 4 anodes. The gold contained in the alkaline bath is deposited as flakes on the electrode or is amalgamated on a gold electrode. The bath of the second chamber and the articles treated in the gold dissolution chamber are transferred to the third chamber for static rinsing. The small amount of gold remaining on the articles is dissolved in the static rinsing chamber and is recovered in a new operation in the second electrolysis chamber. A second rinsing phase takes place in the fourth chamber. The bath is readjusted for cyanide content, in order to prepare a new working solution for a new cycle. An ion-exchanger assembly for the treatment of water necessary for the chambers comprises a mobile, strongly cationic exchanger, a mobile, weakly anionic exchanger, a cartridge filter, and a circulation pump second rinsing phase takes place in the fourth chamber.

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